

**Interim Guidance for Implementation of APHIS
Directive 6800.1**

July 7, 2008

Summary:

- APHIS Directive 6800.1, “Ensuring the Protection of Employees Involved in Highly Pathogenic Avian Influenza Control and Eradication Activities”, was signed March 20, 2006, and establishes policy and guidance for all Programs within the Agency.
- The information contained herein provides practical guidance related to human avian influenza infection prevention and control, including guidance related to training of workers, basic infection control, use of personal protective equipment, decontamination measures, vaccine and antiviral use, surveillance for illness, and appropriate evaluation of persons who become ill.

Background:

Avian influenza is an infection caused by avian (bird) influenza (flu) viruses, type A. These flu viruses occur naturally among birds, particularly waterfowl and shore birds. Wild birds worldwide may carry the viruses in their intestines, but usually do not get sick from them. However, there is a form of avian influenza that can make some domesticated birds, including chickens, ducks, and turkeys, very sick or kill them.

Strains of avian influenza virus are classified as being of either low pathogenicity (most strains) or high pathogenicity. Low pathogenic strains typically cause few or no signs of disease in infected birds. When signs are seen, they may include respiratory problems, diarrhea, a decline in egg production, or an increase in mortality. However, under field conditions, certain low pathogenic strains (H5 and H7 subtypes) can mutate and become highly pathogenic avian influenza viruses, leading to the deaths of entire flocks of poultry.

Infected birds shed influenza virus in their saliva, nasal secretions, and feces. Susceptible birds become infected when they have contact with contaminated excretions or with surfaces that are contaminated with excretions or secretions. Domesticated birds may become infected with avian influenza virus through direct contact with infected waterfowl or other infected poultry or through contact with surfaces (such as dirt or cages) or materials (such as water or feed) that have been contaminated with the virus.

Avian influenza viruses do not usually infect humans, but since 1997, the World Health Organization (WHO) has confirmed 331 cases in humans with 202 deaths (as of 12 November 2007) from influenza H5N1 of avian origin. Most cases of H5N1 infection in humans have resulted from direct or close contact with infected poultry (e.g., domesticated chicken, ducks, and turkeys) or surfaces contaminated with secretions and excretions from infected birds. The spread of H5N1 viruses from an ill person to another person has been reported very rarely, and transmission has not been observed to continue beyond one person. During an outbreak of H5N1 among poultry, there is a possible risk to people who have direct or close contact with infected birds or with surfaces that have been contaminated with secretions and excretions from infected birds.

Two main risks for human health from avian influenza are the risk of direct infection when the virus passes from the infected bird to humans, sometimes resulting in severe disease; and the risk that the virus will change into a form that is highly infectious for humans and be able to spread easily from person to person. The latter scenario could lead to a human pandemic (worldwide outbreak of disease).

Three conditions must be met for a pandemic to start: 1). A new influenza virus subtype must emerge; 2). It must infect humans and cause serious illness; 3). It must spread easily and efficiently among humans. The H5N1 virus currently circulating meets the first two conditions: it is a new virus for humans, and it has infected more than 331 humans, killing over half of them. The third condition, the establishment of efficient and sustained human-to-human transmission of the virus, has not occurred. For this to take place, the H5N1 virus would need to improve its transmissibility among humans. This could occur either by “reassortment” or adaptive mutation. Reassortment occurs when genetic material is exchanged between human and avian viruses during co-infection (infection with both viruses at the same time) of a human or pig. The result could be a fully transmissible pandemic virus. A more gradual process is adaptive mutation, where the capability of a virus to bind to human cells increases during infections of humans.

Symptoms of avian influenza in humans have ranged from typical human influenza-like symptoms such as fever, cough, sore throat, and muscle aches, to eye infections (conjunctivitis), pneumonia, severe respiratory diseases (such as acute respiratory distress syndrome), and other severe life-threatening complications. The symptoms of avian influenza may depend on which specific virus subtype and strain caused the infection. In poultry, infection with avian influenza viruses causes two main forms of disease: (a) a low pathogenic form commonly causing only mild signs of illness such as ruffled feathers and a drop in egg production and which may go undetected and, (b) a highly pathogenic form that causes disease affecting multiple internal organs and is rapidly fatal with a mortality rate approaching 100%. Signs of highly pathogenic avian influenza in poultry include difficult breathing, diarrhea, weakness, decrease in activity, facial swelling, bluish discoloration of the combs and wattles, bleeding from the mucous membranes, and sudden death.

Target Human Population:

- I. Poultry workers
- II. Wildlife biologists
- III. Surveillance workers
- IV. Veterinary laboratory workers
- V. Animal disease outbreak responders

Procedures:

I. Training

1. All APHIS employees involved in HPAI control and eradication activities will be trained by their ICS safety officers and/ or their ICS supervisors with assistance from Safety, Health, and Employee Wellness Branch (SHEWB).
2. Training will include all aspects of prevention and control of human AI infection such as basic infection control, proper use of personal protective equipment (PPE), decontamination measures, vaccine and antiviral use, surveillance for illness, and evaluation of employees who become ill.
3. Materials for training include, but are not limited to, this guidance document and the APHIS Health and Safety Plan (HASP) Template.
4. Employees will be required to complete the “Training checklist” (Attachment 1).
5. Additional Avian Influenza related safety and health training will also be provided by Federal Occupational Health (FOH) industrial hygienists contracted to perform Avian Influenza related respirator fit-testing.

II. Basic Infection Control

1. After contact with infected or exposed birds; contact with contaminated (or potentially contaminated) surfaces; or after removing gloves, wash hands with soap and water for a minimum of 15-20 seconds or the use of other standard hand-disinfection procedures as specified in other USDA (or APHIS or CDC or OSHA) protocols that are developed for basic infection control.
2. Do not eat, drink, or smoke while actively involved in control and eradication activities.
3. Wildlife biologists when working outdoors must work upwind of birds/animals, to the extent practical, to decrease the risk of inhaling aerosols containing dust, feathers, or dander.

III. Personal Protective Equipment (PPE)

All APHIS employees involved in HPAI control and eradication activities will be provided with, trained in the proper use of, and be required to use the following appropriate PPE when carrying out these activities:

- A. Protective clothing capable of being discarded or disinfected, preferably coveralls (with an impermeable apron) OR surgical gowns with long cuffed sleeves (with an impermeable apron).

- B. Gloves capable of being disinfected or discarded (such as nitrile disposable gloves). Cotton inner gloves may be used, in addition to the outer gloves, to absorb perspiration. Gloves must be changed if torn or otherwise damaged. Hands must be washed each time gloves are removed or changed.
- C. Respirators (with the minimum recommendation being the use of a disposable filtering face piece respirator e.g., N95, N99, or N100), used as a part of a comprehensive respiratory protection program as described in 29 CFR 1910.134. Workers shall be medically cleared and fit tested for the model and size of respirator they wear and be trained to fit check the seal of the face piece to the face as a minimum.
Industrial hygienists from FOH will be contracted to perform avian influenza related respirator fit-testing and the associated PPE and Safety and Health training for APHIS employees nationwide. They will perform quantitative respirator fit-testing, using the TSI PortaCount® and N95 Companion exclusively, and will provide avian influenza related PPE training for APHIS employees who have been medically cleared by FOH clinicians to wear respiratory protection.
The N-95 respirators used by APHIS are: 3M 8210, 3M 8511, 3M 8271, and Moldex 2700. After having been medically cleared to wear a respirator, the employees will have a quantitative fit-testing with an N-95 respirator using the TSI PortaCount®. If an acceptable fit factor is not achieved, the employee will be progressively fit-tested with respirators with increasing degrees of protection (N100/ P100, ½ face Air Purifying Respirator [APR], Full Face Air Purifying Respirator [APR], or Powered Air Purifying Respirator [PAPR]) until an acceptable fit factor is achieved.
- D. Eye goggles (or other form of appropriate eye protection).
- E. Protective shoe covers, or rubber or polyurethane boots that can be disinfected or discarded.

IV. Decontamination

- A. All APHIS employees involved in HPAI control and eradication activities will shower completely (including a shampoo) at the end of the activity/ work shift, using a decontamination trailer or other facility that has been set up for this purpose (utilizing a dirty room for clothing removal and showering and a clean room for dressing in freshly laundered clothing to be worn home). Personnel should also clean under their fingernails and clear their respiratory passages by blowing their noses, clearing their throats, and expectorating into a sink with running water. All these should be done immediately after leaving the infected or exposed area.
- B. No item of clothing (including shoes, underwear, etc) worn during HPAI control and eradication activities can be worn home or to any public places outside of the infected/exposed area.
- C. Personnel should always remove protective clothing (except for gloves) first and discard or secure the clothing for disinfection before removing their respirators and goggles. Before removing their gloves workers should

wash their gloved hands thoroughly with soap and water, and after removing the gloves, they should wash their hands again. Doffing of personal protective clothing/equipment should only be done in the decontamination zone.

D. Frequent hand washing as detailed in II above

V. Vaccine

All APHIS employees involved in HPAI control and eradication activities are highly encouraged to receive the current season's influenza virus vaccine. This is to reduce the possibility of dual infection with avian and human influenza viruses. This vaccine will be provided at no cost to the worker through Federal Occupational Health as part of the Occupational Medical Monitoring Program.

VI. Antiviral Drugs

All APHIS workers involved in HPAI control and eradication activities will be highly encouraged to receive protection against avian influenza through the use of daily dose of a neuraminidase inhibitor (e.g., Oseltamivir). The current recommendation is Oseltamivir (Tamiflu®) at a dose of 75mg once a day for every day that the employee is involved in these control and eradication activities. The use of Tamiflu is recommended to continue for at least 7 to 10 days after the last exposure. Please see the Drug Information Sheet for Tamiflu® (Attachment 2) for the side effects and contraindications of Tamiflu®.

VII. Surveillance Monitoring

- A. All APHIS workers involved in HPAI control and eradication activities will complete the Avian Influenza Exposure Symptom Questionnaire (Attachment 3) prior to commencing these activities. Anyone answering "yes" to any question on the health assessment section baseline (Day 0) of the matrix will be excluded from participation in the HPAI control and eradication activities.
- B. The questionnaire will be administered again by the safety officer or healthcare provider on or about day 7 and again day 14 after the exercise. Anyone answering "yes" to any question will be referred to Federal Occupational Health for further evaluation.
- C. All workers involved in HPAI control and eradication activities must monitor their health for the development of fever, respiratory symptoms (cough, runny nose, sore throat, etc), muscle aches, and/or eye infections for at least up to 1 week after their last involvement with these control/eradication activities.

VIII. Evaluation of Ill Workers

- A. Workers who develop fever, respiratory symptoms (cough, runny nose, sore throat, etc.), muscle aches, and/or eye infections for at least up to 1 week after their last involvement in HPAI control/eradication activities

should promptly seek medical care from their healthcare provider and give notification prior to their arrival at the healthcare provider that they may have been exposed to the HPAI virus.

- B. Health care providers should refer to CDC guidelines (<http://www.cdc.gov/flu/avian/professional/>) for the appropriate evaluation, treatment and follow up of individuals developing symptoms after exposure to HPAI. Healthcare providers must follow appropriate federal, state, and/or local guidelines for reporting cases, specimen collection, etc.

References:

Attachment 1

Please read, circle appropriate response, and initial each item below. Sign form at bottom when completed.

_____ 1. I **understand/do not understand (circle one)** that the H7N2 strain of avian influenza and all previous US outbreaks of AI have not been found to cause disease in any humans in the US.

_____ 2. I **understand/do not understand (circle one)** that these guidelines provided by APHIS are the recommendations of the Centers for Disease Control and Prevention (CDC) for maximum protection for workers exposed to AI virus and that these precautions are being taken for my personal protection against the risk of human infection with AI virus.

_____ 3. I **have/have not (circle one)** completed and passed the “Avian Influenza Exposure Symptom Questionnaire” prior to being exposed to AI infected poultry or premises contaminated with AI virus.

_____ 4. I **have/have not (circle one)** received the seasonal human flu vaccine. I received this vaccine at least two weeks **prior to today/today (circle one.)** If I refuse vaccination I **agree/not agree (circle one)** to sign the declination form (Attachment 4). I **understand/do not understand (circle one)** that this vaccination will not prevent human infection by AI viruses but is intended to minimize the likelihood of an AI virus from recombining with human influenza viruses.

_____ 5. I **have/have not (circle one)** been offered antiviral medications and **agree/do not agree (circle one)** to take them as directed by medical professionals.

_____ 6. I **agree/do not agree (circle one)** to wear the Personal Protective Equipment (PPE) recommended by my employer at all times during possible exposure to AI virus. This PPE includes but is not limited to: cloth gloves over nitrile disposable gloves (replace gloves immediately if torn or otherwise damaged), discardable clothing and foot wear or washable boots that can be cleaned and disinfected on site, eye protection, disposable particulate N-95 (or higher) type respirator, and hair bonnet. I **have/have not (circle one)** been instructed on how to properly remove contaminated PPE to prevent cross contamination.

_____ 7. I **have/have not (circle one)** been fit tested and approved to wear an N-95 equivalent or higher respirator during the completion of physically strenuous activities.

_____ 8. I **have/have not (circle one)** been instructed about the importance of strict adherence to and proper use of hand hygiene after contact with AI infected poultry or AI virus contaminated surfaces. After removing protective gloves I **agree/do not agree (circle one)** to thoroughly wash my hands with soap and water for at least 10-15 seconds or to use other hand disinfection procedures as specified by the Safety Officer.

_____ 9. I **agree/do not agree (circle one)** to shower at the end of the work shift in a decontamination unit on site or via arrangements with local hotels using a dirty room for clothing removal and showering and a clean room for dressing in clean clothing to be worn home. Under no circumstances will I wear clothing worn in an AI contaminated environment home: this includes shoes, underwear, etc.

_____ 10. I **agree/do not agree (circle one)** to complete the attached health questionnaire on or about day 7 and again on day 14 after possible exposure to AI virus. If I answer “yes” to any question I **agree/do not agree (circle one)** to be referred to the healthcare provider and to follow their instructions for further examination and specimen collection as needed. I understand that my personal health information may be shared with appropriate county and state health departments and **agree/do not agree (circle one)** to follow additional directions from these agencies if requested to do so.

_____ 11. I **understand/do not understand (circle one)** that both Safety Officers and healthcare providers will be on site to answer any questions that I may have concerning these guidelines.

Printed Name: _____ Date: _____

Signature: _____

Attachment 2

Drug Information for Tamiflu® (Oseltamivir)

Brand Name: Tamiflu®

Active Ingredient: Oseltamivir Phosphate

Strength(s): 75 mg AND 12 mg/ ml

Dosage Form(s): Capsule AND Powder (for oral suspension)

Side Effects: Side effects of Tamiflu® in adults include, but are not limited to, the following:

- Nausea
- Vomiting
- Diarrhea
- Dizziness
- Headache
- Bronchitis
- Stomach pain
- Insomnia
- Vertigo
- Cough
- Fatigue

Rarer side effects in adults, occurring in less than 1% of patients receiving Tamiflu® for treatment, include:

- Unstable angina
- Fever
- Fracture of the humerus
- Peritonsillar abscess
- Anemia
- Pneumonia
- Pseudomembranous colitis

Contraindications:

- Children less than one year of age
- Tamiflu's safety and effectiveness have not been determined in people with chronic heart or lung disease, kidney failure, or in people with high-risk underlying medical conditions
- Contraindicated in individuals with known hypersensitivity to any of the components of the drug.
- Should be used in pregnancy ONLY if the potential benefit justifies the potential risk to the fetus

Reference: <http://www.fda.gov/cder/consumerinfo/druginfo/tamiflu.htm>
http://www.fda.gov/cder/drug/InfoSheets/patient/oseltamivir_phosphatePIS.htm
http://www.fda.gov/cder/foi/label/2005/021246s017_021087s030lbl.pdf

Avian Influenza Exposure Symptom Questionnaire

Date of interview (mm/dd/yy) _____ **Name of interviewer:** _____

Name: (Last) _____ **(First)** _____

Address (# Street Name): _____ **City/State/ZIP:** _____

County of Residence: _____ **Primary Language Spoken** _____

Home Phone: _____ **Work/cell phone:** _____

Age (Years): _____ **DOB (mm/dd/yy):** _____ **Gender:** ☐ **M** ☐ **F**

Vaccination Information:

Did you receive an influenza vaccination this year?

☐ Yes (approximate date mm/dd/yy _____) What type? ☐ Flu shot ☐ FluMist® ☐ No

Work Information:

Occupation: _____

Employer: Poultry Company _____ **Private contractor** _____
State/Fed Agency _____

Type of work (check all that apply):

- | | | |
|---|---|--|
| <input type="checkbox"/> Care of live poultry | <input type="checkbox"/> Transportation of live poultry | <input type="checkbox"/> Cleaning of poultry houses, cages or trucks |
| <input type="checkbox"/> Obtaining blood samples of poultry | <input type="checkbox"/> Process poultry specimens in a lab | <input type="checkbox"/> Obtain cloacal or tracheal swabs |
| <input type="checkbox"/> Slaughter poultry (not depopulation) | <input type="checkbox"/> Poultry depopulation | <input type="checkbox"/> Composting dead poultry |
| <input type="checkbox"/> Disinfecting equipment | <input type="checkbox"/> Farm owner | <input type="checkbox"/> Other farm work |
| <input type="checkbox"/> Other _____ | | |

What is the most recent date you were performing any of the above activities (at any location)?

Date (mm/dd/yy): _____

☐ Still performing above duties

What is the most recent date you performed any of the above activities at a site where poultry were known to be infected with avian influenza?

Date (mm/dd/yy): _____

☐ Still performing above duties

While performing these activities (during the past two weeks), have you used personal protective equipment (PPE)?

☐ Yes, always

☐ Yes, most of the time

☐ Yes, sometimes

☐ Never

Name: (Last) _____ (First) _____

Exposure Date (mm/dd/yy): _____ Exposure Location _____ Exposure # _____

If you used PPE, which articles did you use? (Check all that apply)

- ☐ Protective clothing (such as disposable clothing) ☐ Disposable gloves ☐ Hair bonnet
☐ Fit-tested respirator (such as an N95 or higher mask) ☐ Eye Protection
☐ Disposable protective foot wear or washable boots ☐ Other _____

Health Assessment:

Since your first possible contact with avian influenza infected birds, have you developed any of the following symptoms?

Symptoms	Day 0 (Today's Date: _____)			Day 7 (Today's Date: _____)			Day 14 (Today's Date: _____)		
	Circle One	Date of Onset	Date Resolved	Circle One	Date of Onset	Date Resolved	Circle One	Date of Onset	Date Resolved
Fever	Yes No			Yes No			Yes No		
Measured Temp \geq 100F	Yes No Temp°:			Yes No Temp°:			Yes No Temp°:		
Cough	Yes No			Yes No			Yes No		
Sore Throat	Yes No			Yes No			Yes No		
Runny Nose	Yes No			Yes No			Yes No		
Body Aches *	Yes No			Yes No			Yes No		
Red or Watery Eyes	Yes No			Yes No			Yes No		
Diarrhea	Yes No			Yes No			Yes No		
Headache	Yes No			Yes No			Yes No		
Drowsiness	Yes No			Yes No			Yes No		
Other:	Yes No			Yes No			Yes No		

* Symptom by itself does not indicate referral to local health department for follow-up

Additional documentation may be on an attached form.

Did you seek medical care for your illness? ☐ No ☐ Yes

If yes, name of provider: _____ Address: _____ Phone Number: _____

Were you hospitalized? ☐ No ☐ Yes If yes, Name of Hospital _____ Dates admitted _____

Antiviral Information:

Have you taken any antiviral medication? [Amantadine(Symmetrel), Rimantadine (Flumadine), Oseltamivir (Tamiflu)]

☐ Yes Name of antiviral: _____ First dose _____ Last dose _____ ☐ No

Have any of your family members or other close contacts developed any of the above symptoms? ☐ No ☐ Yes **If yes, who?**

<u>Name</u>	<u>Age (Yrs.)</u>	<u>Relationship</u>	<u>Contact #</u>
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Attachment 4

Declination of Human Influenza Vaccine

I understand that due to my potential occupational exposure to avian influenza, I am being offered the seasonal human influenza vaccine. This vaccination will help to prevent the seasonal human influenza virus from recombining with the avian influenza virus potentially causing a new strain of influenza virus. This vaccine will not protect against avian influenza. I understand that by declining this vaccine I continue to be at risk of acquiring seasonal human influenza virus. If in the future I want to be vaccinated with seasonal influenza vaccine, I can request the vaccination.

Name (Print): _____

Signature: _____

Agency: _____

Last 4 of Social Security Number: _____

Date: _____

Reason for Declination:

☐ Medically contraindicated (explain): _____

☐ Other (explain): _____